

REMARKS

In the outstanding Final Office Action, claims 1, 6-11, 14 and 15 were rejected under 35 U.S.C. §103(a) over RICOH (JP 2003-017221), in view of ZISLIN (Russian Patent Publication No. 2055913) or, alternatively, in view of Japanese Patent Publication No. 2-120792. Claims 2 and 5 were rejected under 35 U.S.C. §103(a) over RICOH (JP 2003-017221), in view of ZISLIN (Russian Patent Publication No. 2055913) or, alternatively, in view of Japanese Patent Publication No. 2-120792, and further in view of MATSUSHITA (JP 2002-184430) or, alternatively, in view of CANON (JP 8-16006). Claims 3, 4 and 13 were rejected under 35 U.S.C. §103(a) over RICOH, in view of MATSUSHITA or, alternatively, in view of CANON.

Upon entry of the present amendment, claims 1-15 will have been cancelled without prejudice to or disclaimer of the subject matter recited therein. New claims 16-28 will have been added for consideration. The cancellation of claims 1-15 and addition of claims new 16-28 should not be considered an indication as to Applicants' acquiescence as to the propriety of any outstanding objection or rejection. Rather, Applicants have cancelled claims 1-15 and added new claims 16-28 in order to advance prosecution and obtain early allowance of claims in the present application.

Each of the outstanding rejections has been rendered moot by the cancellation of claims 1-15. However, Applicants traverse each of the outstanding rejections insofar as new claims 16-28 recite combinations of features similar to the combinations previously recited in claims 1-15.

The new claims are fully supported by the specification and Figures of the present application as filed. Each of claims 17-28 depends, directly or indirectly, from independent claim 16, and therefore incorporate the subject matter of independent claim 16. New claims 16-18 and 23-26 find support in the disclosure of Embodiment 1 as described in the specification of

the present application. New claims 19-22 find support in the disclosure of Embodiment 3 as described in the specification of the present application. Claims 27-28 find support in the disclosure of Embodiment 4 as described in the specification of the present application.

New independent claim 16 is directed to a heating apparatus which employs a configuration where a detection section is made of a magnetic member. An exciting coil is disposed along a heating element acted on by the magnetic field generated by the exciting coil. The detection section is disposed at a position drifted to an inner side of a magnetic path of a magnetic field generated by the exciting coil. With this configuration, the detection section is positioned away from the magnetic path, so that the detection section can be prevented from performing wrongly due to the influence of the magnetic field. Further, the detection section is disposed at a position drifted to an inner side of the magnetic path, so that the exciting coil and the detection section can be disposed in the same area in a compact arrangement.

As a reference, Figures 1-3 shown in the attached Appendix show magnetic paths formed by the heating apparatus according to the herein-contained claim amendments. Figure 1 of the Appendix corresponds to Figure 4 in the drawings for the present application. Figure 2 of the Appendix corresponds to Figure 9 in the drawings for the present application. Figure 3 of the Appendix corresponds to Figure 11 in the drawings for the present application. The magnetic paths shown in the Figures of the Appendix would be recognized by one of ordinary skill in the art reviewing the present application as characteristics of Figures 4, 9 and 11.

RICOH (JP 2003-017221) discloses a configuration where a temperature detector is interposed between winding bundles of a conductor wire of an exciting coil. Multiple embodiments of this configuration in RICOH can be divided broadly into two modes. As a reference, Figures 4-5 of the attached Appendix show positioning of temperature detectors

relative to exciting coils in RICOH (Figures 4(a) and 5(a)) and magnetic paths formed by the exciting coils (Figures 4(b), 4(c), 5(b) and 5(c)).

Figure 4(a) of the attached Appendix corresponds to Figure 2(b) of RICOH. According to the first mode of RICOH as shown in Figure 4(a) of the attached Appendix, a temperature detector is interposed between two exciting coils made of spirally-wound conductor wires. Magnetic paths formed by these exciting coils are shown in Figure 4(b) or Figure 4(c) of the Appendix, according to the direction of current flow. Figure 4(b) and Figure 4(c) both show that the magnetic paths pass through the temperature detector. Therefore, the first mode of RICOH is entirely different from the configuration of the invention to which the new claims are directed.

Figure 5(a) of the attached Appendix corresponds to Figures 5 and 6 of RICOH. According to the second mode of RICOH as shown in Figure 5(a) of the attached Appendix, conductor wires of the exciting coil are wound spirally and a temperature detector is disposed in the center area of the exciting coil. Magnetic paths formed by this exciting coil are shown in Figure 5(b) or Figure 5(c) of the Appendix. Similar to the first mode of RICOH, the magnetic paths of the second mode of RICOH pass through the temperature detector, and, consequently, the second mode of RICOH is entirely different from the configuration of the invention to which the new claims are directed.

As described above, RICOH does not anticipate the features recited in the pending new claims. Accordingly, each of new claims 16-28 is allowable over RICOH alone.

Each of new claims 16-28 is also allowable over RICOH in combination with JP-120797. In this regard, JP2-120797 interposes a thermometer between conductor wires of an exciting coil. However, JP 2-120797 discloses that this thermometer is a radiation thermometer. That is, the thermometer in JP2-120797 measures temperature by the intensity of radiation (generally,

infrared radiation) and does not influence a magnetic field. Consequently, JP2-120797 does not take the influence of a magnetic field into consideration when disposing a thermometer.

Figure 6 of the attached Appendix corresponds to Figure 1 and 2 of JP2-120797. As shown in Figure 6 of the attached Appendix, a radiation thermometer is disposed across the exciting coil and not adjacent to the exciting coil. As a result, the magnetic paths pass through the temperature detector. As described above, the configuration of JP 2-120797 is entirely different from the configuration of the invention to which the pending claims are directed, and JP2-120797 does not disclose or suggest the above-noted configuration of the invention to which the claims are directed.

As described above, modification of RICOH with JP2-120797 would not result in the features recited in the pending new claims. Accordingly, each of new claims 16-28 is allowable over RICOH in view of JP2-120797.

Each of new claims 16-28 is also allowable over RICOH in combination with ZISLIN. ZISLIN (RU 2055913) discloses winding an exciting coil spirally and disposing a temperature sensor on the outer side of this exciting coil. As a result, either magnetic paths pass through the temperature sensor or the temperature sensor is positioned in a position drifted to an outer side of the magnetic paths. Therefore, the configuration of ZISLIN is entirely different from the above-noted configuration of the invention to which the pending claims are directed, and ZISLIN does not disclose or suggest the above-noted configuration of the present invention to which the new claims are directed.

As described above, modification of RICOH with ZISLIN would not result in the features recited in the pending new claims. Accordingly, each of new claims 16-28 is allowable over RICOH in view of ZISLIN.

Each of new claims 16-28 is also allowable over RICOH in combination with JP-120797 or ZISLIN, and further in combination with MATSUSHITA. MATSUSHITA (JP2001-188430) discloses winding an exciting coil spirally. A center core is disposed in a center portion of the exciting coil and a C type core is disposed along the exciting coil. A temperature sensor is disposed outside the center core and the C type core. As a result, the temperature sensor is disposed at a position drifted to an outer side of the magnetic paths. Therefore, the configuration of MATSUSHITA is entirely different from the above-noted configuration of the invention to which the pending claims are directed, and MATSUSHITA does not disclose or suggest the above-noted configuration according to the herein-contained claim amendments.

As described above, modification of RICOH with JP2-120797 or ZISLIN, and further with MATSUSHITA would not result in the features recited in the pending new claims. Accordingly, each of new claims 16-28 is allowable over RICOH in view of JP2-120797 or ZISLIN, and further in view of MATSUSHITA.

Each of new claims 16-28 is also allowable over RICOH in combination with JP-120797 or ZISLIN, and further in combination with CANON. CANON (JP 8-16006) discloses interposing a temperature sensor between the edge of an exciting coil and the edge of a core. However, referring to the relationships of the positions of the coil, core and temperature sensor shown in Figure 1 of CANON, a magnetic flux apparently passes through the temperature sensor in addition to the magnetic flux H illustrated. Therefore, the configuration of CANON is entirely different from the configuration of the invention to which the new claims are directed, and CANON does not disclose or suggest the above-noted invention to which the new claims are directed.

As described above, modification of RICOH with JP2-120797 or ZISLIN, and further with CANON would not result in the features recited in the pending new claims. Accordingly, each of new claims 16-28 is allowable over RICOH in view of JP2-120797 or ZISLIN, and further in view of CANON.

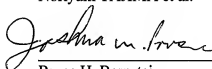
As described above, the configuration of the invention to which the new claims are directed cannot be derived from the documents cited in the Office Action, or any reasonable combinations of these documents. Accordingly, the new claims recite combinations of features which are novel and non-obvious over the cited references.

Accordingly, each of new claims 16-28 is in condition for allowance, and an indication of the allowability of each of new claims 16-28 is respectfully requested.

Any amendments to the claims which have been made in this amendment, and which have not been specifically noted to overcome a rejection based upon the prior art, should be considered to have been made for a purpose unrelated to patentability, and no estoppel should be deemed to attach thereto.

If there should be any questions, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,
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APPENDIX

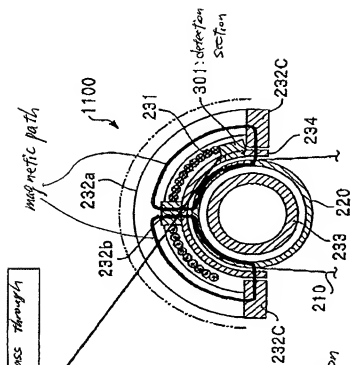
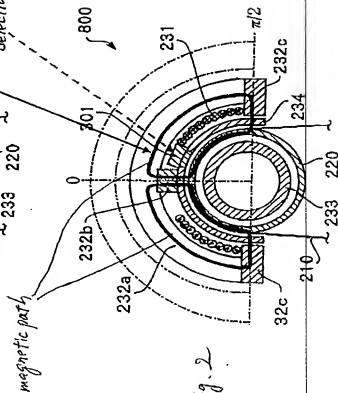
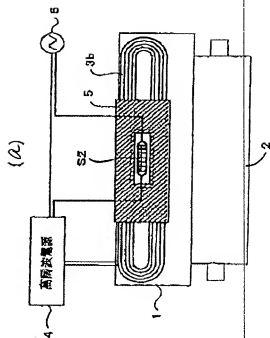
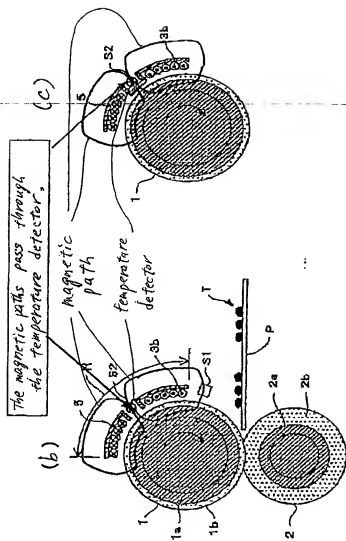


Fig. 3





The magnetic path pass through the radiation thermometer.

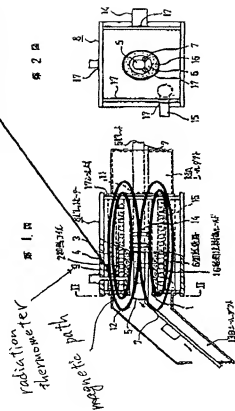


Fig. 6